

WHAT IS CLAIMED AS NEW AND DESIRED TO BE PROTECTED BY
LETTERS PATENT OF THE UNITED STATES OF AMERICA, IS:

1. A threaded fastener, for insertion within diverse types of substrates, comprising wood, metal, thermoplastics, composite materials, concrete, hard aggregate, and the like, comprising:

5 a shank portion extending circumferentially around a longitudinal axis;

 a head portion formed upon a first end of said shank portion;

 a tapered tip portion formed upon a second opposite end of said shank portion;

10 a substantially continuous single helical thread formed upon said shank portion, wherein individual thread portions of said substantially continuous single helical thread comprise crest portions, and wherein further, individual thread portions of said substantially continuous single
15 helical thread comprise upper and lower flank surfaces with an included angle, defined between said upper and lower flank surfaces, being within the range of 40-60°; and

 a plurality of saw-blade type teeth formed upon
20 peripheral edge portions of said crest portions of said individual thread portions of said substantially continuous single helical thread so as to extend substantially continuously and contiguously around the entire circumferential extent of said threaded screw fastener,

25 whereby a single one of said threaded fasteners can be used for insertion within the diverse types of sub-

strates comprising wood, metal, thermoplastics, composite materials, concrete, hard aggregate, and the like.

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2. The threaded fastener as set forth in Claim 1, wherein:
said included angle, defined between said upper
and lower flank surfaces, is preferably within the range of
40-45°.

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3. The threaded fastener as set forth in Claim 2, wherein:
said included angle, defined between said upper
15 and lower flank surfaces, is preferably 40°.

4. The threaded fastener as set forth in Claim 2, wherein:
20 said included angle, defined between said upper
and lower flank surfaces, is preferably 45°.

25 5. The threaded fastener as set forth in Claim 1, wherein:
each one of said plurality of saw-blade type teeth
has a substantially trapezoidal configuration.

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6. The threaded fastener as set forth in Claim 5, wherein:
valleys are defined between successive ones of
said plurality of substantially contiguous substantially
trapezoidal-shaped saw-blade type teeth.

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7. The threaded fastener as set forth in Claim 6, wherein:
each one of said valleys comprises an included
10 angle of 100°.

8. The threaded fastener as set forth in Claim 1, wherein:
15 said plurality of substantially contiguous saw-
blade type teeth are only formed upon peripheral edge por-
tions of said crest portions of leading ones of said indi-
vidual thread portions of said substantially continuous
single helical thread.

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9. The threaded fastener as set forth in Claim 8, wherein:
said leading ones of said individual thread por-
25 tions of said substantially continuous single helical thread
comprises approximately the leading one-third to one-half of
the number of individual thread portions of said substan-
tially continuous single helical thread formed upon said
shank portion of said threaded fastener.

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10. The threaded fastener as set forth in Claim 1, wherein:
said plurality of substantially contiguous saw-
blade type teeth have a predetermined pitch defined between
adjacent ones of said plurality of substantially contiguous
5 saw-blade type teeth; and
each one of plurality of substantially contiguous
saw-blade type teeth has a predetermined radial depth di-
mension.

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11. The threaded fastener as set forth in Claim 10, wherein:
said threaded fastener comprises either one of a
number six, a number eight, a number ten, a number twelve,
15 and a number fourteen sized threaded fastener;
said predetermined pitch, respectively defined be-
tween adjacent ones of said plurality of substantially con-
tiguous saw-blade type teeth, is within a range of 0.60-0.80
mm; and
20 each one of plurality of substantially contiguous
saw-blade type teeth has a predetermined depth dimension
which is within a range of 0.21-0.29 mm.

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12. A threaded fastener, for insertion within diverse types
of substrates, comprising wood, metal, thermoplastics, com-
posite materials, concrete, hard aggregate, and the like,
comprising:
30 a shank portion extending circumferentially
around a longitudinal axis;

a head portion formed upon a first end of said shank portion;

a tapered tip portion formed upon a second opposite end of said shank portion;

5 a single helical thread formed upon said shank portion so as to comprise individual thread portions which are substantially continuous except upon said tapered tip portion wherein an axially oriented slot, intercepting individual thread portions defined upon said tapered tip portion, renders said individual thread portions defined upon
10 said tapered tip portion discontinuous, said individual thread portions of said single helical thread comprising crest portions, and wherein further, individual thread portions of said single helical thread comprise upper and lower
15 flank surfaces with an included angle, defined between said upper and lower flank surfaces, being within the range of 40-60°; and

a plurality of saw-blade type teeth formed upon peripheral edge portions of said crest portions of said individual thread portions of said helical thread so as to
20 extend substantially continuously and contiguously around the entire circumferential extent of said threaded screw fastener,

whereby a single one of said threaded fasteners
25 can be used for insertion within the diverse types of substrates comprising wood, metal, thermoplastics, composite materials, concrete, hard aggregate, and the like.

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13. The threaded fastener as set forth in Claim 12, wherein:

said included angle, defined between said upper and lower flank surfaces, is preferably within the range of 40-45°.

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14. The threaded fastener as set forth in Claim 13, wherein:
said included angle, defined between said upper and lower flank surfaces, is preferably 40°.

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15. The threaded fastener as set forth in Claim 13, wherein:
said included angle, defined between said upper and lower flank surfaces, is preferably 45°.

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16. The threaded fastener as set forth in Claim 12, wherein:
each one of said plurality of saw-blade type teeth has a substantially trapezoidal configuration.

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17. The threaded fastener as set forth in Claim 16, wherein:
valleys are defined between successive ones of said plurality of substantially contiguous substantially trapezoidal-shaped saw-blade type teeth.

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18. The threaded fastener as set forth in Claim 17, wherein:
each one of said valleys comprises an included
angle of 100°.

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19. The threaded fastener as set forth in Claim 12, wherein:
said plurality of substantially contiguous saw-
blade type teeth are only formed upon peripheral edge por-
10 tions of said crest portions of leading ones of said indi-
vidual thread portions of said single helical thread.

15 20. The threaded fastener as set forth in Claim 19, wherein:
said leading ones of said individual thread por-
tions of said single helical thread comprises approximately
the leading one-third to one-half of the number of individu-
al thread portions of said single helical thread formed upon
20 said shank portion of said threaded fastener.

21. The threaded fastener as set forth in Claim 12, wherein:
25 said plurality of substantially contiguous saw-
blade type teeth have a predetermined pitch defined between
adjacent ones of said plurality of substantially contiguous
saw-blade type teeth; and
each one of plurality of substantially contiguous
30 saw-blade type teeth has a predetermined radial depth di-
mension.

22. The threaded fastener as set forth in Claim 21, wherein:
said threaded fastener comprises either one of a
number six, a number eight, a number ten, a number twelve,
and a number fourteen sized threaded fastener;
5 said predetermined pitch, respectively defined be-
tween adjacent ones of said plurality of substantially con-
tiguous saw-blade type teeth, is within a range of 0.60-0.80
mm; and
each one of plurality of substantially contiguous
10 saw-blade type teeth has a predetermined depth dimension
which is within a range of 0.21-0.29 mm.

23. A threaded fastener, for insertion within diverse types
of substrates, comprising wood, metal, thermoplastics, com-
posite materials, concrete, hard aggregate, and the like,
comprising:
a shank portion extending circumferentially
20 around a longitudinal axis;
a head portion formed upon a first end of said
shank portion;
a tapered tip portion formed upon a second oppo-
site end of said shank portion;
25 a substantially continuous single helical thread
formed upon said shank portion, wherein individual thread
portions of said substantially continuous single helical
thread comprise crest portions, and wherein further, indivi-
dual thread portions of said substantially continuous single
30 helical thread comprise upper and lower flank surfaces with

an included angle, defined between said upper and lower flank surfaces, being within the range of 40-60°; and

5 a plurality of saw-blade type teeth formed upon peripheral edge portions of said crest portions of said individual thread portions of said substantially continuous single helical thread which are disposed only upon said shank portion so as to extend substantially continuously and contiguously around the entire circumferential extent of said threaded screw fastener,

10 whereby a single one of said threaded fasteners can be used for insertion within the diverse types of substrates comprising wood, metal, thermoplastics, composite materials, concrete, hard aggregate, and the like.

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24. The threaded fastener as set forth in Claim 23, wherein:
said included angle, defined between said upper and lower flank surfaces, is preferably within the range of
20 40-45°.

25 25. The threaded fastener as set forth in Claim 24, wherein:
said included angle, defined between said upper and lower flank surfaces, is preferably 40°.

30 26. The threaded fastener as set forth in Claim 23, wherein:

said included angle, defined between said upper and lower flank surfaces, is preferably 45°.

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27. The threaded fastener as set forth in Claim 23, wherein:
each one of said plurality of saw-blade type teeth has a substantially trapezoidal configuration.

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28. The threaded fastener as set forth in Claim 27, wherein:
valleys are defined between successive ones of said plurality of substantially contiguous substantially
15 trapezoidal-shaped saw-blade type teeth.

29. The threaded fastener as set forth in Claim 28, wherein:
20 each one of said valleys comprises an included angle of 100°.

25 30. The threaded fastener as set forth in Claim 23, wherein:
said plurality of substantially contiguous saw-blade type teeth are only formed upon peripheral edge portions of said crest portions of leading ones of said individual thread portions of said substantially continuous
30 single helical thread.

31. The threaded fastener as set forth in Claim 30, wherein:
said leading ones of said individual thread portions of said substantially continuous single helical thread comprises approximately the leading one-third to one-half of
5 the number of individual thread portions of said substantially continuous single helical thread formed upon said shank portion of said threaded fastener.

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32. The threaded fastener as set forth in Claim 23, wherein:
said plurality of substantially contiguous saw-blade type teeth have a predetermined pitch defined between adjacent ones of said plurality of substantially contiguous
15 saw-blade type teeth; and
each one of plurality of substantially contiguous saw-blade type teeth has a predetermined radial depth dimension.

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33. The threaded fastener as set forth in Claim 32, wherein:
said threaded fastener comprises either one of a number six, a number eight, a number ten, a number twelve,
25 and a number fourteen sized threaded fastener;
said predetermined pitch, respectively defined between adjacent ones of said plurality of substantially contiguous saw-blade type teeth, is within a range of 0.60-0.80 mm; and
30 each one of plurality of substantially contiguous saw-blade type teeth has a predetermined depth dimension

which is within a range of 0.21-0.29 mm.

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